UTAH

FOREST SERVICE RESEARCH AND DEVELOPMENT

STATE FUNDING HISTORY	Enacted FY 2003 ($)	Enacted FY 2004 ($)	Pres. Budg. FY 2005 ($)
LOGAN			
RMRS-4301 Restoration of Disturbed Lands	$253,000	$354,000	$729,000
RMRS-4501 Bark Beetle Disturbance in Conifers	$615,000	$805,000	$805,000
LOGAN TOTAL	$868,000	$1,159,000	$1,534,000
OGDEN			
RMRS-4801 Forest Inventory and Analysis	$6,532,000	$9,487,000	$9,601,000
PROVO			
RMRS-4253 Shrubland Biol. & Restoration	$1,162,000	$1,144,000	$1,144,000
UTAH TOTAL	$8,562,000	$11,790,000	$12,279,000

RESEARCH & DEVELOPMENT, a division of the USDA Forest Service (FS R&D), strives to be the "go to" organization for information and solutions to sustain forests and rangelands and the values they provide people. FS R&D has the flexibility to address today's issues effectively and to respond to tomorrow's needs. Among the world's leaders in forest conservation research, scientists contribute to the stewardship of land, real property and society by providing research results that help create jobs and affordable homes, and improve the health of trees, forests and forest ecosystems. Innovative research products permit the Forest Service and other public and private land managers to monitor and manage forest responses to environmental change, contributing significantly to the sustainability of the nation's forests and rangelands and improving human health.

FS R&D operates six research stations, the Forest Products Laboratory, and the International Institute of Tropical Forestry located in Puerto Rico. It employs over 500 scientists and hundreds of technical and support personnel at 67 field sites throughout the nation. The FY 2005 President's Budget includes $280,654,000 for Forest and Rangeland Research.

The Rocky Mountain Research Station (RMRS), headquartered in Fort Collins, Colorado, maintains forest and rangeland research and development programs and facilities in 10 states of the Interior

West (AZ, CO, ID, MT, NE, NV, NM, SD, UT, and WY) and covers ND and KS. The FY 2005 President's Budget includes $43,082,000 for the Rocky Mountain Research Station.

The Station maintains three research laboratories in Utah: Forestry Sciences Laboratory in Logan (in cooperation with Utah State University), Forestry Sciences Laboratory in Ogden, and Shrub Sciences Laboratory in Provo (in cooperation with Brigham Young University). Research is currently carried out in four research units that employ 10 scientists and over 100 other professionals and support personnel.

LOGAN

RMRS-4301, Restoration of Disturbed Ecosystems. The unit mission is to improve the scientific basis for understanding how to restore natural processes in and functioning of severely disturbed ecosystems and how these processes can be used to enhance ecosystem management of public lands.

RMRS-4501, Bark Beetle Disturbance Ecology. The unit mission is to develop a scientifically credible knowledge base of ecological disturbances associated with bark beetles in coniferous forests. This information is applied in effective management options designed to maintain or restore these forests into productive, sustainable ecosystems at stand, landscape, and regional levels.

OGDEN

RMRS-4801, Interior West Forest Inventory and Analysis Program (IWFIA). The unit mission is to improve the understanding and management of our Nation's forests by measuring, assessing, and reporting on the extent, condition, and health of forest land of the Interior West on a continuous, annual basis.

PROVO

RMRS-4253, Shrubland Biology and Restoration. The unit mission is to develop knowledge, plant materials, and technology for successful long-term restoration of diverse shrubland plant communities to meet resource needs and values.

FIRE RESEARCH IN UTAH SUPPORTS THE NATIONAL FIRE PLAN. National Fire Plan funding continues the long tradition of Forest Service Research and Development building and leading federal, state, and local partnerships (the guiding principle of the 10-year Comprehensive Strategy) to develop and deliver the scientific foundation of modern management practices.

National Fire Plan funding for research in Utah has already produced the following results:

- Native plant materials are needed to rehabilitate and restore fire damaged and other degraded sagebrush steppe and pinyon-juniper communities in the Great Basin. The availability of native plant materials is lacking. Numerous natural populations (>100) of native shrubs, grasses, and forbs have been identified and seed collections made. Studies have begun to determine handling and care characteristics for species, along with genetic variation within and between populations, so that species can be grown and made more readily available for distribution and use in restoring burned areas, and so that managers can evaluate genetic consequences for the native flora.
- The cycle of wildfires and annual weed invasion has altered millions of acres of western

shrublands and grasslands by reducing biodiversity and increasing fire size and frequency. Scientists are quantifying effects of invasive weed species on native sagebrush plains. Results will provide managers with new tools for reestablishing and protecting biodiversity.

FY 2005 PROGRAM CHANGES:

- The President's budget maintains the Station ongoing program of research focused on sustaining healthy forests and rangelands in the Interior West. In response to the President's Healthy Forest Initiative, an additional $1,725,000 is focused on improving watershed conditions to provide clean and abundant water from western forests and rangelands and funding is provided for addressing the threat invasive species pose to our native ecosystems.
- RMRS-4301 is increased by $375,000 to initiate research focused on impacts of human and natural disturbances, including increasing populations and urbanization, degradation of upland and riparian ecosystems, and reduction in open space, on water quantity and quality and watershed condition in the Great Salt Lake watershed and along the Wasatch Front.
- Forest Service Research and Development will lead an Agency-wide effort to optimize the delivery and practical use of research findings. This is essential to successful implementation of Forest Service priorities, including the President's Healthy Forest Initiative. Opportunities have been identified that leverage current science and technology applications efforts in healthy forests applied science, watershed management, invasive species, hazardous fuels utilization and management, and community preparedness. New funds in FY 2005 will be targeted to leading-edge technical assistance on a competitive basis.

SIGNIFICANT RESEARCH PRODUCTS:

- The professional video *"Fading Gold – The Decline of Aspen in the West"* continues to be widely distributed. This video describes the decrease in aspen over much of the West and assists managers in implementing techniques for aspen restoration.
- Models have been developed for predicting the probability of native bark beetle outbreaks at the landscape scale that take into account the increased risk of outbreaks due to global warming. These models incorporate temperature-driven biological processes and are useful in forecasting landscapes at risk in a changing climate.
- Research results have demonstrated that satellite imagery holds promise as a tool for monitoring large and small-scale bark beetle caused mortality.
- The Interior West FIA Program completed a pilot study for the Bridger-Teton National Forest that evaluated four indicators of rangeland health. This is an initial step toward development of a 'criteria and indicator approach' to assessing health and functionality of forest and range lands in the Interior West.
- The Interior West FIA Program is currently implementing the annual inventory in five states (UT, AZ, CO, MT, ID).
- Research is evaluating control measures for the invasive annual cheatgrass that dominates millions of hectares of degraded western rangeland. Biological control by the naturally occurring fungal disease, head smut, shows

promise. Control of cheatgrass by head smut could alter the short fire-return cycles in sagebrush steppe and pinyon-juniper woodlands and restore degraded ecosystems to higher levels of productivity and biodiversity.

- Provo scientists are collaborating with the BLM, Association of Official Seed Certification Agencies, State Foundation Seed organizations and others, in the Great Basin Restoration Initiative, Cooperative Native Seed Increase Program, to develop native plant materials that will increase the diversity of species and seed supplies available for restoring degraded areas of the Great Basin.

SOME CLIENTS/COLLABORATORS:

Brigham Young University
Canadian Forest Service
Caribou, Black Hills, & Fishlake NFs
South Dakota Game & Fish Department
States of AZ, CO, ID, MT, NV, NM, UT, WY
University of Idaho
University of Montana
University of Wisconsin
University of Wyoming
USDA Agricultural Research Service
USDI, Bureau of Land Management
USFS National Forest Genetics Lab
USFS Regions 1, 2, 3, & 4
USFS Remote Sensing and Applications Center
Utah Division of Wildlife Resources
Utah State University